REMARKS

In the specification, paragraph [0000a] has been added to note the relationship of the current application to co-pending U.S. Patent Application 10/719,718. No new matter has been added.

The Final Office Action mailed March 4, 2010, has been received and reviewed. Claims 1, 3-7, 9-13 and 15-21 are currently pending in the application. Claims 1, 3-7, 9-13 and 15-21 stand rejected. Applicants have amended claims 1 and 12, and respectfully request reconsideration of the application as amended herein.

Claim 1 is amended herein to recite, in part, "dividing a total surface area of the crop by a surface area of the crop sample to obtain a crop surface area multiplier; dividing the crop surface area multiplier by a total mass of the crop to obtain a crop surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the crop surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the crop per mass of the crop." Support for the amendment is found in the as-filed specification at least at paragraph [0035].

Claim 12 is amended herein to recite, in part, "dividing a total surface area of the tuber by a surface area of the tuber sample to obtain a tuber surface area multiplier; dividing the tuber surface area multiplier by a total mass of the tuber to obtain a tuber surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the tuber surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the tuber per mass of the tuber." Support for the amendment is found in the as-filed specification at least at paragraph [0035].

35 U.S.C. § 112 Claim Rejections

Claims 1, 3-7, 9-13 and 15-21 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the

application was filed, had possession of the claimed invention. Applicants respectfully traverse this rejection, as hereinafter set forth.

The Examiner rejected claims 1 and 12 as being unsupported by the as-filed specification. Specifically, the Examiner states that the originally filed specification does not disclose a method of determining the amount of sprout inhibitor present on the surface of a crap sample involving the recited steps. Office Action, p. 3. Independent claims 1 and 12 have been amended herein to correspond with the subject matter as described in the as-filed specification.

Claim 1 has been amended herein to recite, in part, "dividing a total surface area of the crop by a surface area of the crop sample to obtain a crop surface area multiplier; dividing the crop surface area multiplier by a total mass of the crop to obtain a crop surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the crop surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the crop per mass of the crop." Claim 12 has been amended herein to recite, in part, "dividing a total surface area of the tuber by a surface area of the tuber sample to obtain a tuber surface area multiplier; dividing the tuber surface area multiplier by a total mass of the tuber to obtain a tuber surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the tuber surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the tuber per mass of the tuber."

Paragraph [0035] of the as-filed specification describes a method of quantitating an amount of sprout inhibitor present on a surface of a potato. The amount of sprout inhibitor is multiplied the total surface area of the potato divided by the surface area of the four cores of the potato (10, for example), i.e. a crop surface area ratio. The amount of sprout inhibitor is then divided by the mass of the potato and multiplied by the calibration ratio (R) to obtain a ppm per gram of potato, i.e. the amount of sprout inhibitor present on the surface of the crop or tuber per mass of the crop or tuber. Accordingly, claims 1 and 12, as amended herein, are supported by paragraph [0035] of the as-filed specification.

As the subject matter of independent claims 1 and 12, as amended herein, is found in the as-filed specification at least at paragraph [0035], Applicants respectfully request withdrawal of

the 35 U.S.C. § 112, first paragraph rejections of independent claims 1 and 12 and the dependents thereof.

Claims 1, 3-7, 9-13 and 15-21 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse this rejection, as hereinafter set forth.

The Examiner rejected claims 1 and 12 as being unclear. Specifically, the Examiner states that it is unclear how the calculation results in the determination of the amount of sprout inhibitor present on the surface of the crop sample. Independent claims 1 and 12 have been amended herein to clarify the determination of the sprout inhibitor present on the surface of the crop or tuber per mass of the crop or tuber.

Claim 1 has been amended herein to recite, in part, "dividing a total surface area of the crop by a surface area of the crop sample to obtain a crop surface area multiplier; dividing the crop surface area multiplier by a total mass of the crop to obtain a crop surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the crop surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the crop per mass of the crop." Claim 12 has been amended herein to recite, in part, "dividing a total surface area of the tuber by a surface area of the tuber sample to obtain a tuber surface area multiplier; dividing the tuber surface area multiplier by a total mass of the tuber to obtain a tuber surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the tuber surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the tuber per mass of the tuber."

Accordingly, the method of claim 1 recites determining a crop surface area ratio (unit less) by dividing a total surface area of the crop by a surface area of the crop sample. The crop surface area ratio is used to determine the amount of sprout inhibitor on the total surface area of the crop based on the surface area of the crop sample. The crop surface area ratio is divided by a total mass of the crop to obtain a crop surface area multiplier (1/mass). The amount of sprout inhibiting chemical in the extraction solution is multiplied by the amount crop surface area

multiplier and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the crop per mass of the crop. Accordingly, the method of claim 1, as amended herein, accurately results in the determination of the amount of sprout inhibitor present on the surface of the crop per mass of the crop, and claim 1 is not indefinite.

Claim 12 is not indefinite for substantially the same reasons as claim 1.

As the subject matter of independent claims 1 and 12, as amended herein, is not indefinite, Applicants respectfully request withdrawal of the 35 U.S.C. § 112, second paragraph rejections of independent claims 1 and 12 and the dependents thereof.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent Publication No. 2005/0059162 to Wohleb in View of U.S. Patent Publication No. 2001/0053517 to Anton et al. and U.S. Patent No. 5,958,714 to Gordon et al.

Claims 1, 3-7, 9-13 and 15-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wohleb (U.S. Patent Publication No. 2005/0059162) in view of Anton et al. (U.S. Patent Publication No. 2001/0053517) and Gordon et al. (U.S. Patent No. 5,958,714). Applicants respectfully traverse this rejection, as hereinafter set forth.

To establish a *prima facie* case of obviousness the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. Additionally, the Examiner must determine whether there is "an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740-1741, 167 L.Ed.2d 705, 75 USLW 4289, 82 U.S.P.Q.2d 1385 (2007). Further, rejections on obviousness grounds "cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id* at 1741, quoting *In re Kahn*, 441, F.3d 977, 988 (Fed. Cir. 2006). Finally, to establish a *prima facie* case of obviousness there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Furthermore, the reason that would have prompted the combination and the reasonable expectation of success must be found in the prior art, common

knowledge, or the nature of the problem itself, and not based on the Applicant's disclosure. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006); MPEP § 2144. Underlying the obvious determination is the fact that statutorily prohibited hindsight cannot be used. *KSR*, 127 S.Ct. at 1742; *DyStar*, 464 F.3d at 1367.

Wohleb teaches extracting an analyte from a sample matrix. *Wohleb* at abstract. A sorption vial 20 is placed within a sample vessel 30. *Id.* at paragraph [0044]-[0045] and FIG. 1. The sorption vial 20 includes a sorptive coating 27 such that when the sample vessel 30 is sealed and inverted, the analyte within a sample 15 is partitioned between the sample 15 and the sorptive coating 27. *Id.* at paragraph [0053]. The sorption vial may be removed from the sample vessel 30 and an elution solvent may be added to the sorption vial 20. *Id.* at paragraph [0054].

Anton teaches methods for determining the presence of a specific nucleic acid sequence in a non-fluid biological sample. *Anton* at abstract. The biological sample may be spiked with an internal standard of a known quantity at the time of obtaining the biological sample in order to determine the natural degradation of the sample over time, such as during shipment. *Id.* at paragraphs [0007] and [0088].

Gordon teaches methods and apparatus for qualitatively or quantitatively determining one or more analytes in matrices such as food, biological fluids, etc. *Gordon* at abstract. A chemical contaminant may be present in foods such as pesticides, herbicides, excessive concentrations of food additives and it is desirable to detect the presence of such chemical contaminants prior to sale or consumption of affected foods. Id. at col. 4, lines 60-65. A specific chloroacetamide herbicide may be determined relative to the total concentration of all chloroacetamide herbicides contained within a fruit or vegetable matrix using a series of membranes and reagents. *Id.* at col. 18 lines 52-20. A chopped or ground solid material combined with any desired solvents, digestants, enzymes, chelators, additives, or other necessary components may be placed within a vessel 12and allowed to percolate or flow downwardly through an aperture 14 and through a membrane 16 into a receiving well 20 in contact with a reagent-containing pad 22. *Id.* at col. 20 line 61- col. 21 line 24. The color of the pad 22 may be compared to a color chart to determine the concentration of analyte in the solid material. *Id.*

Claims 1-11

Wohleb, Anton, and Gordon do not teach, suggest, or otherwise render obvious "dividing a total surface area of the crop by a surface area of the crop sample to obtain a crop surface area multiplier; dividing the crop surface area multiplier by a total mass of the crop to obtain a crop surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the crop surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the crop per mass of the crop," as recited in independent claim 1, as amended herein. None of the applied references teach or suggest a method of quantifying the sample taken, and thus do not teach or suggest the elements of the method of claim 1.

Wohleb, Anton, and Gordon also do not teach, suggest, or otherwise render obvious "providing an extraction solution for dissolving a sprout inhibiting chemical of a crop sample and a predetermined amount of an internal standard in a container" and "comparing the amount of internal standard present in the container at the chemical testing facility with the amount of internal standard placed in the container at the crop storage location to obtain *a calibration ratio*," as recited in independent claim 1. The Examiner states that Wohleb does not disclose the use of an internal standard. Office Action, p. 6. The Examiner relies on Anton as teaching the internal standard. *Id.* However, Anton teaches spiking a biological sample with an internal standard of a known quantity at the time of obtaining the biological *sample in order to determine the natural degradation of the sample over time*, such as during shipment. *Id.* at paragraphs [0007] and [0088]. Because the internal standard taught by Anton degrades over time, the internal standard of Anton cannot be used to obtain a calibration ratio since the concentration of the internal standard of Anton changes by an unknown factor over time due to degradation. In other words, the user of Anton would have to assume that the method used to measure the amount of the internal standard were already calibrated to accurately measure the known amount of internal standard introduced into the biological sample if no degradation occurred. Accordingly, the internal standard taught by Anton is used to estimate a rate of degradation of the biological sample, not a calibration ratio. Gordon teaches determining a concentration of an analyte via a color change pad. Accordingly, Gordon also does not teach or suggest comparing the amount of internal standard present in the container at the chemical testing facility with the

amount of internal standard placed in the container at the crop storage location to obtain a calibration ratio.

As Wohleb, Anton, and Gordon do not teach, suggest, or otherwise render obvious each and every element of independent claim 1, it is respectfully submitted that a *prima facie* case of obviousness has not been established against independent claim 1. Consequently, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103(a) rejection of claim 1.

The nonobviousness of independent claim 1 precludes a rejection of claims 2 through 7 and 9 through 11, which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03.

Claims 12, 13, and 15-21

Wohleb, Anton, and Gordon do not teach, suggest, or otherwise render obvious "dividing a total surface area of the tuber by a surface area of the tuber sample to obtain a tuber surface area multiplier; dividing the tuber surface area multiplier by a total mass of the tuber to obtain a tuber surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the tuber surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the tuber per mass of the tuber," as recited in independent claim 12, as amended herein. None of the applied references teach or suggest a method of quantifying the sample taken, and thus do not teach or suggest the elements of the method of claim 12.

Wohleb, Anton, and Gordon also do not teach, suggest, or otherwise render obvious "quantifying an amount of the internal standard in the extraction solution; comparing the quantified amount of the internal standard in the extraction solution in the container at the chemical testing facility with the predetermined amount of the internal standard placed in the extraction solution deposited in the container at the potato storage facility to obtain *a calibration ratio*," as recited in independent claim 12. The Examiner states that Wohleb does not disclose the use of an internal standard. Office Action, p. 6. The Examiner relies on Anton as teaching the internal standard. *Id.* However, Anton teaches spiking a biological sample with an internal standard of a known quantity at the time of obtaining the biological *sample in order to determine*

the natural degradation of the sample over time, such as during shipment. *Id.* at paragraphs [0007] and [0088]. Because the internal standard taught by Anton degrades over time, the internal standard of Anton cannot be used to obtain a calibration ratio since the concentration of the internal standard of Anton changes by an unknown factor over time due to degradation. In other words, the user of Anton would have to assume that the method used to measure the amount of the internal standard were already calibrated to accurately measure the known amount of internal standard introduced into the biological sample if no degradation occurred. Accordingly, the internal standard taught by Anton is used to estimate a rate of degradation of the biological sample, not a calibration ratio. Gordon teaches determining a concentration of an analyte via a color change pad. Accordingly, Gordon also does not teach or suggest comparing the quantified amount of the internal standard in the extraction solution in the container at the chemical testing facility with the predetermined amount of the internal standard placed in the extraction solution deposited in the container at the potato storage facility to obtain a calibration ratio.

As Wohleb, Anton, and Gordon do not teach, suggest, or otherwise render obvious each and every element of independent claim 12, it is respectfully submitted that a *prima facie* case of obviousness has not been established against independent claim 12. Consequently, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103(a) rejection of claim 12.

The nonobviousness of independent claim 1 precludes a rejection of claims 13 and 15 through 21, which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See* In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03.

ENTRY OF AMENDMENTS

The amendments to claims 1 and 12 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

CONCLUSION

Claims 1 through 21 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,

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